

Appl. No. 09/783,633
Amdt. Dated 25-Apr-05
Reply to Office Action of 12/23/2004
Attorney Docket No. : 6006-009

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 48. (Currently amended) An implantable sensor device having a plurality of structural elements capable of expanding within an anatomical passageway at least some of the plurality of structural elements further comprising a at least one sensor element that selectively detects an energy stimulus and responds to the detection of the energy stimulus by altering the geometry or conformational profile of the device body member.

Claim 49. (Previously presented) The implantable sensor device according to Claim 48, wherein the structural elements are fabricated of a forming material selected from the group consisting of shape memory materials, superelastic materials, plastically deformable materials, and elastically deformable materials.

Claim 50. Cancelled.

Claim 51. (Currently amended) The implantable sensor device according to Claim ~~50~~ 49, wherein the energy stimulus comprises an exogenous energy stimulus selected from the group consisting of microwave, ultrasound, radio frequency, ultraviolet, infrared, magnetic resonance, x-rays, laser, and beta and gamma irradiation.

Claim 52. (Previously presented) The implantable sensor device according to Claim 51, wherein the exogenous energy stimulus results in localized heating in vivo.

Claim 53. (Previously presented) The implantable sensor device according to Claim 52, wherein the exogenous energy stimulus is a laser delivered by a laser catheter.

Claim 54. (Previously presented) The implantable sensor device according to claim 49, wherein the energy stimulus is a physiological stimulus.

Claim 55. (Previously presented) The implantable sensor device according to Claim 54, wherein the physiological stimulus comprises an endogenous energy stimulus selected from the group consisting of fluid pressure, fluid shear forces, body temperature, cellular binding and molecular binding.

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Claim 56. (Previously presented) The implantable sensor device according to Claim 49, further comprising a sensor element that facilitates the interaction with the energy stimulus and mediates the altering of the geometry or conformational profile of the device body member.

Claim 57. (Previously presented) The implantable sensor device according to Claim 56, wherein the sensor element comprises a plurality of sensor regions integrally defined on at least one of a luminal or abluminal surface of the device body member.

Claim 58. (Previously presented) The implantable sensor device according to Claim 57, wherein the sensor regions are fabricated of a shape memory or superelastic material so that the properties of the sensor regions differ from that of the remaining structural elements.

Claim 59. (Currently amended) The implantable sensor device according to Claim 58, wherein the sensor regions exhibit a ~~martensitic~~ martensitic transition temperature higher than that of the remaining structural elements.

Claim 60. (Previously presented) The implantable sensor device according to Claim 59, wherein upon the sensor regions undergoing martensitic transformation, the sensor region stimulates the remaining structural elements to undergo martensitic transformation and effect a change in the geometry of the implantable sensor device.

Claim 61. (Previously presented) The implantable sensor device according to Claim 60, wherein the implantable sensor device displays an altered geometry that produces an image detectable using non-invasive imaging techniques.

Claim 62. (Previously presented) The implantable sensor device according to Claim ~~60~~ 48, wherein the ~~implantable sensor device displays an~~ altered geometry or altered conformation that produces an image detectable using is capable of detection by non-invasive imaging techniques.

Claim 63. (Previously presented) The implantable sensor device according to Claim 62, wherein the implantable sensor device further comprises structural elements having areas of inclusion of superelastic material, wherein the superelastic material is responsive to externally applied forces resulting in a martensitic transformation in the structural elements having areas of inclusion of superelastic material.

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Attorney Docket No. : 6006-009

Claim 64. (Previously presented) The implantable sensor device according to Claim 63, wherein the externally applied forces is a force selected from the group consisting of ultrasound, irradiation, microwave, radio frequency, ultraviolet, infrared, magnetic resonance, x-rays and gamma irradiation.

Claim 65. (Previously presented) The implantable sensor device according to Claim 48, wherein the structural elements form the walls of the sensor device, the structural elements being fabricated of laminate layers of shape memory or superelastic material.

Claim 66. (Previously presented) The implantable sensor device according to Claim 65, wherein the structural elements are formed of at least two laminate layers, wherein a first laminate layer has a first martensitic transition point at normal physiological temperature and a second laminate layer has a second martensitic transition point that is greater than the first martensitic transition point.

Claim 67. Cancelled.